Science for Humanitarian Emergencies & Resilience (SHEAR)

PhD Studentship:

Seamless prediction of flood hazard in Nepal for Forecast-based Financing

Advancing capacity for multi-hazard early warning in Nepal

Supervisors: Dr Liz Stephens & Professor Hannah Cloke
(elisabeth.stephens@reading.ac.uk, h.l.cloke@reading.ac.uk)

Department of Geography and Environmental Science

University of Reading

Project description

Forecast-based Financing (FbF) makes funding available on the basis of predefined standard operating procedures developed in collaboration between practitioners, donors and scientists which clearly states what preparedness actions will be taken based on forecast of different lead-time.

The SHEAR FATHUM project addresses the interdisciplinary challenges associated with FbF in sub-saharan Africa, but a new FbF project has been established in Nepal with World Food Programme Nepal and members of the SHEAR LANDSLIDE-EVO team. A PhD studentship linking these two activities therefore provides a unique opportunity for advancing capacity for multi-hazard early warning in Nepal.

Questions that the PhD student could tackle include, but are not limited to:

- What is the limit of predictability of floods* for different river catchments in Nepal?
- What factors control the limit of predictability (e.g. river basin size, climate regime, precipitation forecast skill, catchment concentration time, temporal resolution of data and model)
- Can hydrological post-processing techniques improve this limit of predictability?
- What are the best post-processing techniques (e.g. data assimilation, error correction) for improving decision-making ability at different lead times in Nepal?
- How can DHM and Global Flood Awareness System forecasts be integrated seamlessly for use by DHM / FbF initiatives

* These questions will be tackled with decision-making requirements in mind; e.g. the limit of predictability of floods is based on the FbF project-defined flood danger levels, and the required discrimination in terms of the minimum probability of a flood required to trigger action.

Project Advisors: Paul Smith (ECMWF, Waternumbers), Sumit Dugar (Practical Action Nepal), Rishi Ram Sharma, Ram Gopal Kharbuja (Director General / Deputy Director General DHM)

Field visit to Western Nepal following project inception meeting in Kathmandu. Photo credit: Landslide EVO team

Skills and experience:

This project would be suitable for students with a degree in meteorology, physical geography or environmental science. Students will be required to work in a unix programming environment with R, python or similar, previous experience is not essential as training will be provided.

Eligibility and funding:

Students must hold an undergraduate degree (equivalent of upper second-class honours) and preferably a Masters qualification in a relevant discipline.

Due to visa restrictions the student must spend at least 50% of their time at the University of Reading, the exact proportion will be set by the supervisors based on the student's previous experience and the budget available for placements. The student must work on this project full-time.

Applicants from the UK, South Asia or sub-saharan Africa are eligibile for a stipend of approximately £14553 per annum (tax free) and tuition fees at the UK / EU or overseas student rate for a period of three years with a possible further half year extension.

Contact:

For informal discussion about this studentship please contact Dr Liz Stephens, University of Reading elisabeth.stephens@reading.ac.uk.

How to apply:

To be considered for the studentship, please submit a CV, a cover letter highlighting your relevant background and experience, and two referees, to elisabeth.stephens@reading.ac.uk.

Should you be selected for this post you will be invited to submit a formal application through the University of Reading online application system. Details of this and more can be found here: http://www.reading.ac.uk/graduateschool/gs-homepage.aspx.

Deadline: 15 October 2017 or until the position is filled.